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ABSTRACT

Based on responses received from Argentina, Botswana, Egypt, and the Republic of Korea, this progress report consists of analyses of the case studies and a comparative survey. Part 1 analyzes the reports of each of the four countries individually. Argentina's report is discussed in terms of its four chapters: General Background, Method of Collecting Information, Vocational Education Programmes under the State Sector, and Vocational Education Programmes under the Private Sector. Discussion of the Botswana report is by its six chapters: Introduction: Objectives and Methodology, Employment and Manual Skills Training, General Background, Vocational Training Institutions, Employers and Manual Skills Training, Trade Testing, and The Self-Employed and Manual Skills Training. Discussion of the Egypt report focuses on four chapters: Introduction and Objectives of the Study, Methods and Procedures, Findings, and Conclusions and Recommendations. The Republic of Korea's report is discussed in terms of its four parts: Problems, Status of Occupational Training, National Skill Certification System, and Suggested Direction of Vocational Education and Training. Part 2 comments on achievement of objectives by these four studies. Areas of focus include existing facilities for vocational education, apprenticeship system, upgrading courses, national certification of skills, and opinions of employers. Seven recommendations are listed. (YLB)

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SURVEYS AND STUDIES IN ADULT EDUCATION

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PARIS, 23 January 1980

UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

A STUDY ON THE GENERAL EDUCATIONAL REQUIREMENTS FOR ACCESS TO VOCATIONAL EDUCATION

Progress Report

by Lê Thanh Khôi

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In many developing countries, large numbers of young adults have not access to the facilities of vocational education, not because they lack skills, but because they lack the formal schooling required by the legislation or regulations.

Unesco's Approved Programme and Budget for 1977-1978, sub-project 1.531.2 of the Regular Programme, states:

> "In order to identify the general educational needs of the various categories of those in employment who have not had sufficient initial education to allow access to vocational training leading to skilled occupations, a survey will be conducted in several countries, the results of which it will be possible to draw upon for the preparation of projects designed to meet the needs of the employment market and ensure greater social mobility".

In fulfilment of this programme, four countries were selected for undertaking the studies: Argentina, Botswana, Egypt and the Republic of Korea.

The present progress report is based on the responses received from these four countries. In accordance with the terms of reference, it will consist of firstly, an analysis of the case studies, secondly, a comparative survey including comments, conclusions and recommendations.

PART I

ANALYSIS OF THE CASE STUDIES

ARGENTINA

This report includes four chapters:

I. General background

II. Method of collecting information

III. Vocational education programmes under the State sector

IV. Vocational education programmes under the private sector

I. General background

The background information is intended to explain the economic structure of the country and the problems of vocational education.

The total population amounts to 19 million and the rate of activity to 49%, which is a high rate. Migratory movements have been marked and the urban population totals more than half the total population.

Argentina can be termed a semi-industrialized country, with 34% of the labour force in industry, 50% in services and 16% in agriculture. Argentina began its industrialization process with a low demographic density and rate of growth, a process which was substantially helped by the influx of immigrants.

The import substitution process has given way to a more diversified structure with metallurgy, chemicals and motor vehicles expanding, but their capital-intensive technologies account for the fact that with 50% of the industrial production, these industries employ only 37% of the industrial labour force. In order to increase their productivity, they place special emphasis on training workers.

This is reflected in the educational structure of the active population. As technology becomes more complex, the percentage of manual workers declines, the other categories increase. The better educated are found in the dynamics sectors and public services, workers with lower education in the declining branches of activity.

II. Method of collecting information

Information was sought from the private and the State sector.

Private sector

Information was obtained from interviews and questionnaires addressed to a sample of companies and private institutes recognized by the Ministry of Education which offer full training courses and shortened refresher courses.

State sector

Collection of data, interviews and questionnaires were made at CONET (National Council for Technical Education), DINEA (National Department for Adult Education) and State companies.

III. Vocational education programmes under the State sector

CONET has the following training centres:

(a) National vocational education centres. They are 41 and train adolescents, usually school drop-outs, unskilled workers and adults, in a number of trades and skills by means of flexible courses.

(b) Temporary residential centres. They operate for two-year periods in regions where a low population growth does not justify building a permanent centre. There are 70 monotechnical and further education centres and 20 rural and home economics centres.

The programmes offered are as follows:

practical courses (two-year) for adults having completed primary education;

vocational education courses for young people (15 and over) having completed the 5th grade of primary education;

shortened vocational education courses for adults; their duration varies according to the skill taught; no entrance requirements;

training courses for instructors: these are chosen from experienced and skilled workers;

televised courses;

courses for border town populations in urban and rural areas;

courses for certain groups: the mentally and physically handicapped, those in jail;

courses for the armed forces intended to qualify conscripted soldiers in a variety of skills;

training and refreshing courses for workers employed by companies and institutions under agreements with CONET.

Courses are prepared in the following sequence:

occupational analysis, with a view to determining the urgent needs of industry;

trades breakdown: each trade is described with the tasks it includes;

a list of skills the worker should have and which should therefore form the backbone of his training;

the job from a professional angle: the kind of work involved and the professional level the worker should attain.

The courses are free, open to adolescents and adults, men and women. They last from 60 to 500 hours depending on the subject. Certificates granted by CONET are officially recognized throughout Argentina.

The number of students trained in vocational education has risen from 829 in 1971 to 8,066 in 1977, that of instructors trained from 283 to 449 during the same period.

CONET is funded mainly by the National Treasury (92% of its budget in 1977) and by taxes paid by companies (1% of the yearly wages paid). Companies can qualify for an 80% tax refund if they provide technical training.

Besides CONET, the National Department for Adult Education (DINEA) runs education centres for adults in order to complement, refresh or bring up to date their education:

primary education centres: the main institution of DINEA;

community education centres: offer primary education and complementary elementary vocational training in areas where security is at risk (slums, housing estates);

education centres for aboriginals: offer primary education and complementary elementary vocational training in aboriginal community centres;

mobile education centres: their object is to encourage technical advancement in the community. They operate in urban and rural areas to help primary education centres; instructors go from centre to centre according to requirements;

centres for training workers in trades: offer elementary education and vocational training.

Applicants must be 15 years of age and have completed primary education.

Courses are arranged according to the needs of the provinces.

In 1977, the number of students amounted to 100,577 (of which 94,146 in the education centres): 61% male, 39% female; the staff to 4,810 people.

Finally, most State companies offer training courses to their workers in areas needed. Applicants are tested to determine their level of knowledge; they must have completed primary education. Courses are given by instructors initially trained by CONET and are held in working hours.

In 1978, 1,932 courses were given to 11,962 students, with a total of 957,885 man-hours.

IV. Vocational education programmes under the private sector

Up to a few years ago, most of the workers acquired their qualifications on the job. Most of the original industrial skills were introduced by European immigrants. With industrial expansion, workers were learning new techniques, without any formal training, either from European craftsmen or from Argentine technicians educated abroad. So immigration was a powerful force in speeding up the growth of industry.

In the present phase of capital-intensive industrialization, companies are more and more aware that high technological development requires a better level of education and training of their workers and that they have to provide them with it: the higher the technological level, the wider the range of training courses in the skills needed.

The most active sectors include: petroleum, metallurgy, electronics, motors and chemicals. One-third or more of their workers had attained post-primary education levels by 1970. With the exception of the chemical industry which needs only semi-skilled personnel, all these industries have put emphasis on training their workers: major companies consider that the money invested is not lost even if 50% of the workers trained leave them through finding better jobs.

In the petroleum industry, there are 25 courses involving 150 participants and 10,200 man-hours. Entrance requirements are to have completed primary education and a minimum age of 28. Courses are held during working time; they are financed by the companies and the teachers are company instructors.

In the motor industry, the workers to be trained are chosen by their supervisors and tested to fit them for the trade. Training does not always guarantee promotion, so many workers leave the firms once they are trained; usually they end up as self-employed mechanics.

The metallurgical industry has the most efficient and up-to-date training schemes. The three leading companies have 160 courses with 1,511 students and 56,727,473 man-hours.

In the foodstuff, construction and textile sectors, only one-fifth of the workers had completed primary education in 1970.

The construction industry employs cheap and least educated workers. Training is obtained by doing the job with a master builder or bricklayer. Since the big firms pay higher wages, they attract the more skilled workers, the smaller firms have to manage with what is left, sometimes with detrimental results. In order to remedy this, the Argentine Construction Chamber signed an agreement with CONET to establish the first training centre in 1978. Its aim is to train unskilled workers referred to it by the companies. Courses lead to qualifying as master builders. The instructors come from CONET.

The food, drink and tobacco industries also employ the least educated workers since manufacturing processes do not require any special skills. None of the firms has training courses.

The textile industry which has reached a high degree of automation needs highly qualified technicians, not workers. Firms have training courses for workers in the middle and higher levels. The Federation of Textile Industries has a training centre holding three-year courses. Entrance requirements are to be 15 years of age and to have completed primary education. The garment industry is made up of small firms and employs mostly women. CONET's technical training programme for women makes a significant contribution.

Industries in the intermediate sector (glass, stone, chalk, rubber, etc.) are also made up of small firms which cannot afford training programmes for their workers. Only a few of them hold training courses.

Finally there are private institutes offering shortened evening courses to qualifying students for work on a self-employed basis or in small workshops (electrical, repairing appliances, television sets, etc.). The courses are free and do not require any educational level.

To sum up, the Argentina labour market appears reluctant to absorb workers trained under the education system or, better said, this training is inadequate to meet the demands of productivity.

However, the CONET training course for instructors is geared to specific market needs in the sense that companies needing certain skills request CONET to train instructors who will then organize courses within the industry.

Thus it can be stated that the training of workers in Argentina is almost entirely company-based. Yet the overall number of company-based training courses for workers is not significant owing to the fact that the more technologically advanced firms employ fewer workers. The other which employ the major part of the work-force train them on the job.

Companies which have their own training departments offer courses for technicians, but not always for workers. Ten-thousand technicians and 3,000 workers qualify annually at State courses.

The courses for workers aim at fitting the man for the job rather than providing him with a useful trade should he leave the company. This training becomes more and more specialized. Automation has brought about a change in the meaning of the trade for the worker: he is no longer tied to one trade, he can perform others; on the other hand, he is not acquiring the know-how to compete in the labour market. In countries like Argentina where industries at different stages of development coexist, this can lead to a wastage of skilled labour or their under-utilization.

Almost every developed industry requires its workers to have completed primary education on joining the plant. This ensures the success of training on the job and furthermore it cuts down on training costs.

The report does not put forward any recommendations.

BOTSWANA

This report includes six chapters:

I. Introduction: objectives and methodology

II. Employment and manual skills training. General background

III. Vocational training institutions

IV. Employers and manual skills training

V. Trade testing

VI. The self-employed and manual skills training

Six appendices are devoted to: terms of reference; list of employers, institutions and individuals visited and interviewed; list of participants to the Unesco Survey Seminar; trade testing; the self-employed and manual skills training; bibliography.

I. Introduction: objectives and methodology

The introduction states the objectives of the study and terms of reference, then the methodology employed: interviews with the authorities of the training institutions (the National Centre for Vocational Training, the brigades, the prisons), consulting the literature, collecting information on trade tests, surveying public and private employers and the self-employed. Preliminary findings were presented and discussed at a seminar in April 1979, which served for preparing the final report.

II. Employment and manual skills training. General background

Botswana is a country the main productions of which are agriculture (25% of GDP) and mining (11%). These percentages are very low compared to the public and private services (32%).

Problems of unemployment and underemployment are acute: in 1978, out of 376,000 persons available for work, only 208,000 were gainfully employed, meaning unemployment for 44% of the labour force. The main employers in the "modern sector" are education, local and central government, trade, restaurants and hotels. Besides, 25,200 people work in South African mines.

The majority of the labour force is unskilled. Botswana has to depend heavily on expatriate labour, especially for high level posts in the managerial, professional and technical fields. This lack of a citizen pool of qualified and experienced technicians and craftsmen is seriously hampering the fast development of the economy.

A major obstacle to technical training is the smallness of business enterprises: 94% of them employ less than 50 persons, 50% between 1 and 5 persons. Small enterprises are unlikely to have either the resources or the incentive to undertake training. However most of them provide manual skills training on a informal day-to-day basis.

III. Vocational training institutions

The formal sources of vocational training are:

the National Centre for Vocational Training, now the Polytechnic;

the brigades;

the prisons.

Closely linked to training is trade testing.

1. The National Centre for Vocational Training

The NCVT in Gaborone has been the only training centre of its kind in Botswana. It offers a one-year pre-employment basic engineering skills course (part one training), which includes general studies, trade studies and trade practice experience; after six months work experience, graduates can sit for trade test C. It also offers a wide range of short upgrading courses (part two training): these are often directed at helping workers upgrade from trade test C to B and from B to A; they last from two to six weeks, and provide training in specific skill areas.

Part one training has specializations in automechanics, electrical and mechanical. Sixty men are actually enrolled. There is a lack of sufficient applicants of the correct calibre and qualifications, and also staff shortage. Entry requirements are three to five years of secondary education, aptitude test and interview. A number of private and public employers sponsor students (36 out of 60), which means that they pay them wages and training allowance during the training period. No fees are charged for training or board and lodging.

Part two training had 29 upgrading courses for 303 male and 2 female students in 1977. The main entry requirement is that the person be nominated by the employer as being able to benefit from the training. The level of formal education therefore varies and includes people with only primary school education. In 1977 only 17 students were unsponsored.

The major constraint on expansion is lack of trained staff (23 in post in 1977).

Since mid-1976, the NCVT has an industrial liaison officer responsible for maintaining close links between the Centre and industry for the purposes of:

(a) ascertaining the needs of employers with respect of quality and quantity of technical manpower and to advise the Principal of current needs and future trends;

(b) promoting a clear understanding of the resultant services offered by the Centre to the employers of technical personnel.

New courses are therefore offered in response to requests, researched needs or manpower planning requirements.

2. The Botswana Polytechnic

In April 1979, the NCVT was redesignated the Botswana Polytechnic to add an extra level, that of technician training. Two alternative methods of entry are proposed: one is to enter a craftsman course after completing junior certificate; the second is direct entry for form 5 school-leavers. The effectiveness of the new Polytechnic will depend upon the arrival of new equipment, and particularly staff. Basic crafts (trade test C with a minimum standard 7 qualification) will become the sole responsibility of the brigades.

3. The brigades

The first brigade was founded in 1965. Its initial rationale was to take primary school-leavers who could not get into secondary school and train them through productive activities in a skill which would bring them employment and contribute to rural development while covering the costs of education. In 1979, there were 16 brigade centres with a combined intake of 470. There is a government convened national brigades co-ordinating committee, and the Ministry of Education has a brigade development centre with a role in staff training, curriculum development and advisory services. The government pays an annual subsidy per trainee.

Generally a brigade gives training in a particular occupation: building, carpentry, automechanics, etc. Several brigades are grouped together in a brigade centre. Trainees spend about 80% of their time producing food and services for sale (covering the costs of training). The other 20% of their

time is spent on trade theory and academic education (in maths, science, English and development studies). Most of the skills training is directed to passing the national trade test C after a three-year programme.

This test certifies the trainees as semi-skilled craftsmen. A few "advanced brigades" train people to trade test B level after one and a half to two years, and then to trade test A - the level of a skilled craftsman.

A brigade centre does not only do vocational training. Many centres are employers with "production brigades", which contribute revenue to the overall operation and diversification of village economies. Some seek to provide informal skill training not only for the young, but for older people. Some do extension work and explore new technologies and forms of co-operative job creation. There are therefore a wide range of aims and philosophies within the brigade movement with differences of opinion over clientele, the balance between training and production, the question of training for "modern" or "rural" skills, etc. The centres also vary enormously in size and complexity. The only common denominator is that they combine skills training with production.

Entry requirements

This question gives rise to varying opinions: completion of standard 7 is generally considered necessary, but not sufficient, for passing trade test C. Some trades, such as automechanics and electrical, require junior certificate. On the other hand, if training is for self-employment rather than the trade tests, the level of formal schooling is irrelevant.

Proficiency in English is also necessary, because the trade tests are conducted in English, but not necessary for practical skill acquisition in most trades.

As the level of training gets higher and trade testing becomes more formalized, so brigades have tended to take applicants with higher qualifications (more secondary school-leavers). As brigades increasingly set their own entrance tests and interviews, school qualifications are no more considered sufficient entry requirements. A concurrent trend with the rising levels of educational qualifications is that ages are dropping.

Fees and sponsorship

Most brigades charge fees, firstly, to help cover costs, and secondly, to make trainees value their training. On the whole, fees are not an obstacle for trainees. The Ministry of Education has started a subsidy scheme which is a form of sponsorship.

Provisions of places

Since 1977, most brigade centres have increased their total number of trainees. However, there are not enough places in relation to the potential clientele.

Five centres offer residential places. All centres, except one, are opposed to more of them because of the extra expense and administration and for fear that it would not encourage the trainees to be self-sufficient and would make brigades like secondary schools. All brigades are located in reasonably large population centres and find no problem with trainees getting lodgings.

Personal attributes affecting access

Those are age, sex, health and geographical origin.

With exceptions, the informal age limits are 16-25. The main reason for the lower limit is the need for some physical maturity; over 25, people begin to have family responsibilities and cannot cope with brigade conditions.

Although there is no selection deliberately based on sex, cultural attitudes towards certain jobs are acting towards self-selecting applications (e.g. women for textiles, men for building). All brigades would welcome a change in this pattern.

The majority of brigade centres has no formal medical test and therefore no explicit health requirements. Some administer medical checks, not to exclude people, but to help them.

Most centres, deliberately or in practice, have their trainees coming from the surrounding areas. Others recruit on a national basis.

Current recruitment and selection procedures

Courses are advertised nationally through the newspaper, leaflets or radio. Locally, the centres use posters, visits to primary schools, circulars and word of mouth. However, the national newspaper only reaches the bigger villages and word of mouth has limitations as information is sometimes monopolized by certain sections of the community or restricted to friends and relatives of current trainees.

Suitable applicants are invited to the centre for tests and an interview. They have to pay their own travel expenses, which is a constraint. The tests are usually in English and maths and in aptitude. More and more brigade centres have devised their own tests. (There is however no national standardization of entrance tests.) Candidates are then interviewed by a panel.

Part-time skills courses

Most brigades are concentrating on "throughput training" i.e. taking in school-leavers, putting them through a three-year course and sending them out to the job market with trade certificate. This is a move away from the concept of a brigade centre that would play an all-round role in rural development - providing community services, extension work, and employment opportunities as well as formal training.

Brigades are favourable to the idea of part-time training in immediately useful skills, but point out that it would make large demands on administrative, managerial and instructor staff and there are already manpower shortages at these levels.

Provision of new courses and expansion plans

Most brigade centres mount new courses in order to meet local needs as identified by the co-ordinator. Too little initiative comes from the community itself, or from the central government. The most important brigade centre, Serowe, conceives the brigade as an instrument for restructuring village economies rather than as simply a means of providing throughput training for young people.

Some centres have plans for new brigades to begin in 1979, others emphasize informal training activities aimed at reaching older, poorer people, and increasing their job opportunities and productivity.

The major constraint on expansion is the shortage of qualified staff: managers, teachers, and instructors, not of capital. The brigades are still excessively dependent on expatriates.

Access to skills training

This access has to be assessed both in terms of the institution's target clientele and in terms of demand from different social groups.

For the majority of people interviewed, the brigades should aim at making throughput training of primary school-leavers for the modern sector, more efficient by raising entrance requirements, by taking younger people, by improving academic background and the standard of skill training, and by recruiting on national basis. However the brigades are not a solution to the primary school-leavers problem, since they take only 4%-6% of them.

For a significant minority, the brigades should primarily be concerned with informal training for adults in the local community by aiming at older people, by providing short and part-time courses, by disregarding academic qualifications, and by training in skills immediately usable for making an income in the local economy.

It is agreed that for the brigades to develop, and therefore to provide more training opportunities, they need to become financially viable. They are currently too heavily dependent on donors, volunteer staff and Ministry of Education subsidies. On the other hand, training should be more closely linked to employment opportunities, and the brigades should take a role in employment creation (e.g. by capital loans to graduates). None the less, given the magnitude of the primary school-leavers and of rural unemployment and underemployment, the training opportunities provided by the brigades will always be less than the potential demand.

4. The prisons

The prisons have a prison industries programme for training and production. In 1979, out of about 3,000 prisoners, 132 are trained in carpentry, tailoring, leatherwork, gardening, brickmaking, upholstery. The programme is intended to ensure no subsequent relapse into crime, to transform prisoners into productive members of society and to reduce maintenance costs, though in a modest way. There is an industrial manager with a few technical staff, but it is extremely difficult to recruit for existing posts. There is no machinery and mostly hand tools are used. Proper training and certification is lacking.

IV. Employers and manual skills training

There is considerable variation amongst employers, both public and private, in terms of the extent and types of training they provide or sponsor. Some large employers have well-developed training programmes. For the smaller employer, the cost of training and loss of labour are major constraints.

1. Government departments and parastatal organizations

Within the Department of Posts and Telecommunications, there is a training centre with a basic two-year sandwich programme of technician training. A second type of manual training consists of specialist courses for industrial class employees.

The Central Transport Organization has also a training school with a craft training programme largely for school-leavers. It lasts for three years and covers the main trades related to motor transport. It qualifies the trainee for a grade B

test certificate. Technicians holding the grade B certificate are able to proceed to grade A certificate through a series of short courses combined with on-the-job training.

In the Roads Department, the training is also centred on a training centre. The training programme is divided into four levels, ranging from A courses for technicians in civil engineering lasting three years, to D courses of two weeks for upgrading purposes.

The Botswana Housing Corporation does some on-the-job training but has no formal apprenticeship scheme.

The Botswana Meat Commission has a training scheme in meat processing lasting 27 months entirely on the job.

To sum up, the availability of training opportunities is attached to the development of a training centre within the establishment. In its absence, opportunities for training tend to decrease, although this can be partly compensated for by the provision of on-the-job training and/or sponsorship to the NCVT. It remains that for the unskilled or semi-skilled worker, training opportunities are limited. The NCVT has not been able to shape courses to meet the particular needs of the public sector.

For school-leavers, selection for a training programme means selection for employment. For training at an advanced level of skill, e.g. technician and craft level, the entrance requirement is usually a formal educational qualification such as the Junior Certificate or the Cambridge Ordinary Level Certificate, plus an interview. However, job experience and previous informal training should also be recognized as valid criteria of selection, especially for the unskilled or semi-skilled people. Selection for training is also often based on recommendations by foremen or supervisors: they should be carefully monitored. Other constraints on access to manual skills training are the sex and lack of knowledge of training opportunities by both the employer and employee.

2. Private sector

The two major companies in the private sector are the diamond mining company (De Beers) and the copper mining company (BCL).

De Beers provides a craft trainee programme requiring the Junior Certificate and lasting five years; the company has its own certification (67 trainees in 1979). Two other types of training are: firstly, specialised training, mainly on-the-job, for those involved in mining operations; secondly, upgrading courses for unskilled or semi-skilled workers.

At BCL, the mechanic training scheme is the main input for training. Selection from among company employees is made on the recommendation of front line supervisors, a standard VII being desirable but not essential. The major part of the training, which lasts seven years, is done on the job. The company provides its own certification (340 trainees in December 1978) and some courses in skilled and semi-skilled fields.

Both mining companies consider their training programmes suitable and sufficient for their respective needs. While making use of training facilities at the NCVT, they are dissatisfied with its programme which they consider too general and hence lacking focus on a specific trade or skill; in their nature and content they have no say. The location of the NCVT is not ideal, it obliges the mines to move people hundred of kilometres away.

The training programmes at both companies emphasize practical on-the-job training. They entail more than 75% practical experience either on the job or in the training workshops. Their apprenticeship schemes are designed for school-leavers with Junior Certificate or Cambridge School Certificate; the selection procedure uses standardized tests. Both companies consider the poor educational background of their trainees as one of the greatest constraints to training. Proficiency in English is one of the most important requirements. Due to poor education the vast majority of the work-force is considered untrainable.

Both companies do not consider the cost of training and the loss of manpower as major obstacles to the provision of training opportunities; rather they view training as an investment for the future. There is no formal discrimination against women and older people although the major training programme appears to cater for men and fresh school-leavers.

In the private non-mining sector, there is only one large company, Minestone (in construction). Its training programmes are for specific purposes, i.e. when the company needs particular skills, it selects trainees on the basis of their performance on the job and on reports from charge-hands and foremen. Trainees spend three weeks in the company's training school and subsequently two weeks on the job under strict supervision. Occasionally, Minestone also sends selected trainees to the NCVT. The company does not send people to train in skills which are not of immediate use because it considers such training as a waste of time and resources.

All other private employers are small establishments. Any training that is provided is informal and entirely on the job. Most of these employers are more concerned with getting on with production than with training. All of them have doubt about the necessity or desirability of formal training at the NCVT because its courses are often not directly relevant to their needs, their timing is not suitable and its location too far; besides they can hardly afford the loss of manpower during training. One common problem to them is the lack of skilled artisans for training their work-force. They also fear that the trainee leaves them soon after completing their training to find jobs with higher pay and better prospects for advancement.

3. <u>The Botswana Employers Federation</u>

According to the Botswana Employers Federation, the educational background of manual employees is very low. This diminishes their chances of being trained. In addition, vocational training is not included in the school curriculum. This should be done.

The country's training facilities (including the brigades) are adequate at the grade C level. A lot of problems are, however, encountered in trying to upgrade artisans. Employers are unwilling to release employees because they are afraid of losing production: as a result, the NCVT is not getting enough candidates for some courses. On the other hand, the NCVT does not have adequate resources and/or does not offer relevant courses to make its training programme sufficiently attractive. In addition, it suffers from lack of staff, lack of accommodation for older trainees and, in part, also from lack of sufficient or suitable equipment. There is not enough co-ordination and co-operation between employers and the NCVT.

Institutional training is very important. The bulk of it must however be provided centrally. Only a minority of employers can afford to build and run effective training programmes.

V. Trade testing

There are three tests: C for which three years of employment are required, followed by B and A, each of which require two years work experience. They are conducted at different centres, no fee is charged. The tests include both theory and practicals, and are conducted in English with an exception for test C.

In 1977, 1,008 candidates were tested and 575 (57%) passed at the three levels.

Concerning the quality of the system, there are two main problems. Firstly, the lack of qualified staff to run the tests adequately. Secondly, different views are held on the amount of training and work experience required at different levels, on the nature and relevance of skills tested, on the mode of testing, on the balance between practicals and theory, on the language used (English or Setswana), and on the standards to be maintained. Employers are generally dissatisfied for a number of reasons, most notably with the lack of a rigorous and consistent standard of testing, and the disparity between the nature of the test and the previous training and work experience of the tester; this particularly applies to the equipment on which the test is undertaken.

In short, an urgent review and reform of the trade testing system is required; better testing facilities should be made available to candidates and the possibility of using part-time staff as examiners be explored.

VI. The self-employed and manual skills training

The self-employed generally have low levels of schooling: 32.5% have no schooling at all and only 7.5% have gone beyond standard 7. They are mostly in their middle ages because they had to acquire not only the skills, but also savings to start business. Skills were acquired mostly on the job and individually (85%). Very few (15%) have had formal vocational training. Most of the interviewees (87.5%) had not had their skills certificated. Only 5 out of 40 had successfully taken trade tests. Many wish to upgrade their skills, but the vast majority have not tried to gain access to formal vocational training institutions because of various reasons. In fact none of them had gained such access to upgrade their skills.

Most interviewees feel that there is more need for government financial and material support rather than for further training. Further training may mean learning to use new and complicated tools that cost a lot of money which they do not have and therefore the training would not be utilized. The mechanics, builders and welders feel that they could benefit a lot by attending specialized courses on particular machines or on the use of particular tools. Some international voluntary agencies, development trusts and brigades, make efforts to train rural dwellers to sustain rural cottage industries; however the knowledge imparted is rudimentary. There is a need to establish part-time, evening, day release and week-end courses, correspondence courses, mobile training units, besides financial and material assistance. The major problem is still lack of finance and lack of training staff.

EGYPT

This report includes four chapters:

I. Introduction and objectives of the study

II. Method and procedures

III. Findings

IV. Conclusions and recommendations

I. Introduction and objectives of the study

In Egypt, there are five categories of workers:

the managers with higher education level;

the technicians prepared in the technical institutes (two years after the secondary school) or the technical schools (five years after the junior secondary school);

the skilled workers prepared in technical schools or training centres after the junior secondary school;

the semi-skilled workers (craftsmen) with four to six years of primary education;

the illiterate workers.

During the 1970s, the development of Arab oil countries have attracted more than one million and a half workers from Egypt to these countries; besides, the land reclamation projects, building and reconstruction, have absorbed hundreds of thousands of technicians and workers, so that shortage has been experienced in some trades, and many centres for accelerated training were established. In 1976, a high council for the planning and training of the labour force was created in view to co-ordinate the activities of the various training organizations and set up general guidelines for planning.

The report describes the existing system of vocational education and training of the skilled, semi-skilled and unskilled workers.

II. Method and procedures

To obtain data, two types of research were undertaken:

desk research implying the study of records and documents;

field research, that is visits to different factories, offices, centres and other institutions. Besides interviews with employers and workers, a questionnaire was also used.

The questionnaire deals with: size of employment and training in the institution, funding, trainees, curricula, trainers and teachers, methods of training, follow up and evaluation.

It was addressed to three types of organizations:

(1) vocational training centres within the domain of certain ministries: Industry and Mineral Wealth, Housing and Reconstruction, Social Affairs, Labour and Training;

(2) centres belonging to factories, companies and organizations of the public sector;

(3) private centres.

III. Findings

1. Technical education

The bulk of skilled workers are prepared at the industrial secondary schools, others in training centres after the junior secondary school. The industrial secondary schools are 121 and enrolled 131,000 students in 1978-1979 (89% male, 11% female). They include 86 specializations and have a yearly average of 33,000 graduates. Entry requirements are: junior secondary certificate, age 17-22, medical examination and psychological tests. The programme lasts three years (44 hours per week) and include general and technological subjects and practical training in workshops.

2. Apprenticeship

The apprenticeship system is organized by the Ministry of Industry and Mineral Wealth. It lasts three years and includes two cycles: one year of basic training in vocational training centres, two years of practical training in factories. Entry requirements are: 14-19 years, junior secondary certificate, psychological tests, interviews and medical examination. The number of trainees, the required skills and hours of training are determined jointly by the Ministry of Industry and the employer. At the end of the apprenticeship period, a final exam is held and the graduate is given a certificate.

3. Quick (accelerated) training

This system has been adopted to cope with the needs of the labour market. The training and vocational guidance authorities determine the trades for which workers are to be trained, and the training centres, according to the availability of facilities, trainers and supervisors. The programme and duration of training are established jointly with them. The training lasts from three to six months. Entry requirements are: 18-30 years; mastering reading and writing, vocational guidance tests, physical fitness. Training is free of charge. On its successful completion a certificate is given to the trainee.

Priorities for admission to accelerated training programmes are given to: people released from the armed forces; people released from prisons and recommended by security authorities; unskilled workers (unemployed or newly employed); workers employed in stagnant trades; unskilled workers seeking better jobs; surplus workers in different trades; agricultural workers recommended by the Committee for Developing Rural Areas.

The report mentions the following examples of the importance of quick training for coping with shortage problems in some trades.

(a) The building industry is facing a continuous shrinkage in the number of skilled craftsmen due to three main reasons: the tendency of a large number of craftsmen to work outside the country; the natural decrease due to old age and death, fathers being not replaced by sons who prefer to work on other sectors; the lack of a stable training policy, in addition to the deficiencies in the existing training centres.

The Training Organization in Construction and Building has set up a ten-year plan for quick training in 1976-1985. The plan aims at mobilizing all available resources and establishing new centres so that the total number amount to 65 in 1985 (they are now 36). Three of them are to train the trainers. The total capacity will be 50,000 trainees and 600 trainers per year. The average duration of training is three months during which trainees are given financial incentives and benefits.

(b) In the industry sector, many centres have been established by the Ministry of Industry to cope with the shortage of skilled and semi-skilled workers, resulting from the emigration of hundreds of thousands of them to Arab countries. There are now 46 centres preparing about 4,000 skilled and 2,000 semi-skilled workers per year through the apprenticeship system, quick training and skill upgrading. Entry requirements are: for skilled workers, the junior secondary certificate, psychological and medical examinations; for unskilled workers, knowledge of reading, writing and arithmetic. The centres also train supervisors, trainers and production consultants.

4. Skill upgrading

Under this system, the companies select some workers and supervisors in order to upgrade their technical standard and promote them. They must have five years experience in trade, master reading and writing and pass an interview.

5. Two special projects

After describing the education, training and upgrading of skilled and semi-skilled workers, the report analyses two special projects: one for young people having not completed their education, the other for poor families.

(a) The Vocational Gradation Project

The project is meant for young people having not gone beyond the fourth grade of primary education and whose ages range from 12 to 18. They are encouraged to register at labour offices under the control of the Ministry of Labour and Training. These offices receive requests from employers indicating the number, sex, age and educational background of the young people they need. The labour offices nominate the trainees according to their date of registration and recommend them for certain trades, according to their abilities and aptitudes. Follow-up visits are made to the institutions in order to check the trainees' attendance and technical achievements. Training takes place in the afternoon for four hours every day. It lasts from 4 to 22 weeks, according to the trade. Programmes are set up jointly by the Ministry of Education and the Ministry of Labour and funded by the latter. Various incentives are given to the trainees. They are trained to become semi-skilled workers. Courses include 80% practical training and 20% theory closely related to the trade. At the end of the courses, the trainees are evaluated and the successful ones are given certificates. The total number of graduates for the period 1968-1978 amounts to 138,145, of which 9,116 are employed in the public sector and 129,029 in the private sector. In 1978, there were 4,909 nominees, 1,496 graduates, of which 1,305 were employed.

(b) The Productive Families Project

This project is aimed at increasing the income of poor families belonging to one of the following categories: craftsmen who are already working; unskilled people who can be trained in some trade, people who cannot acquire technical skills but can benefit from simple commercial and agricultural projects.

Families can submit a request to obtain any of the following services: equipment and raw materials (to be paid back through the sale of the products), loans, technical guidance and up-to-date drawings and catalogues. Young people can join a specialized centre to be trained on manual crafts related to: carpets, blankets, carpentry, leather work, palm tree products, agricultural products, etc. Graduates from these centres can apply for joining skill upgrading centres where they are admitted after a competitive exam and acquire specialized skills during 7 to 10 months so that they are able to become trainers.

It is worthwhile noting that no schooling is required for joining any of these centres.

IV. Conclusions and recommendations

1. Concerning entry requirements

Here the report summarizes what it has already said precedently about the educational and other requirements for admission to colleges of engineering and technical institutes, to technical secondary schools (skilled workers), to vocational training centres (semi-skilled workers), to quick training centres (craftsmen).

2. Concerning technical education

(a) The students enrolled in the technical secondary schools do not have the necessary technical or vocational background.

To remedy this situation, it is attempted to develop the curricula of both primary and junior secondary stages so as to include some practical activities and develop in the students pre-vocational skills that would help them choose the most suitable vocation(s) according to their interests, abilities and aptitudes. Another attempt has been to extend the period of compulsory education to nine years.

(b) The curricula of the technical secondary schools are mainly theoretical. Not more than 33% of the programme is devoted to practical training in workshops (Unesco recommends 60%). These workshops suffer from shortage of equipment, outdated machines and tools. No training is done in factories. Another drawback lies in the methods of teaching.

All these shortcomings lead to the low standard of the graduates and their inability to cope with the requirements of the work in which they are employed. Accordingly, 25% of them are not employed in the trades for which they have been prepared, nor do they continue their vocational training. They find themselves doing clerical work or other odd jobs.

To remedy this waste, legislations are being prepared to assign to big factories the responsibility of providing vocational training for students in technical secondary schools in the area.

Recommendations include:

developing the syllabi, textbooks and methods of teaching in order to develop the competencies required for productive work in different trades;

establishing new specializations to keep pace with scientific and technological development;

providing up-to-date equipment;

providing qualified teachers.

3. Concerning the categories of workers who have not had any education or have not completed their education

The report cites again the Vocational Gradation Project "which renders great services to the labour market by providing big numbers of semi-skilled workers and to tens of thousands of individuals and their families" and the Productive Families Project.

4. Concerning training programmes

They reveal quantitative as qualitative shortcomings:

(a) they do not provide for favourable attitudes toward work;

(b) on the other hand, a worker should not be looked upon as a machine. Cultural aspects should be given due attention in training programmes;

(c) in view of the shortage of funds, training centres have to be considered production units. This will upgrade the productivity of trainees and trainers and provide enough money to meet the expenses of training;

(d) almost all programmes require mastery of reading, writing and arithmetic. Meanwhile Egypt suffers from a high percentage of illiteracy. A nation-wide campaign has to be launched to cope with the problem, with the contribution of world organizations.

REPUBLIC OF KOREA

This report is divided into four parts:

I. Problems

II. Status of occupational training

III. National skill certification system

IV. Suggested direction of vocational education and training

I. Problems

Over the last two decades, the Republic of Korea has seen a startling economic growth, the industrial structure shifting from labour-intensive to technology or brain-intensive industry. However, the educational system has not kept up with demand for qualified personnel.

Policy therefore is oriented towards emphasizing out-of-school programmes. There is a trend to replace educational attainment as the minimum entry requirement to jobs by a competency-based selection. Similarly, other channels besides the school ladder qualify the students completing informal cycles like the graduates of the formal system at corresponding levels.

Another trend is towards providing earlier exposure to vocational programmes for youngsters unable to continue schooling. In-plant training centres, both public and private, have been in operation and vocational high schools have run an adjunct programme of similar nature to increase their employability. Industrial firms are encouraged to establish vocational schools together with occupational programmes for women. For those who have no access to these programmes, there are community and privately-sponsored programmes of training. However, their level is low and they need continuing upgrading. Consequently, a national certification system was institutionalized in 1975 to motivate them for continuing upgrading of their skills.

In 1977, the rate of activity was 35.5%. More than one-fourth of the total employment was in the industrial sector. Primary school graduates and below that level account for 53.4% of the total employment, middle school graduates for 28.1%, high school graduates for 16.3% and junior college graduates for 2.2%. The problem is that there is no systematic, sustained effort to train them.

II. Status of occupational training

1. Occupational education

Besides the formal school system, a larger amount of training is carried out by voluntary social organizations, special courses attached to vocational high schools, youth training schools, adult classes and in-plant training centres.

The occupational programme is broadly divided into two components: common and major courses. Both include required and elective ones.

The formal schools include the vocational high schools, the higher civic schools, the trade schools and the higher trade schools. Their students numbered 624,724 in 1977.

The non-formal occupational programmes include air and correspondence high schools, youth occupational schools, special classes within industry and private institutes. They had 307,508 students in 1977.

The minimum entry requirement for all these schools is the completion of primary education. The duration of the programme is three years, except in the youth occupational schools and the private training institutes where it varies from 1 to 12 months. Those schools have no entry requirements; in the youth occupational schools, skilled workers and those with industrial experience of more than one year are given advantages in admission.

2. Occupational training

The occupational training is defined as "an effort to improve job skills in specific areas in a way that increases productivity". It is thus distinguished from the educational programmes aimed at providing the foundation for training.

The Administration of Labour Affairs is the authority responsible for planning, co-ordinating, monitoring and administering occupational training. From 1967 to 1978, it has trained 587,831 skilled workers, of which 61% through in-plant training and 25% through public training programmes.

The objectives of occupational training are:

(1) to train skilled workers for the development of heavy and chemical and construction industries;

(2) to increase the employability of unskilled persons in productive work;

(3) to develop new technological skills;

(4) to support the vertical mobility of skilled workers.

There are two kinds of training programmes: instructor training (pre-service, license and refreshing courses) and skilled worker training (basic, upgrading, transfer and refreshing courses).

The basic course produces skilled (after completion of middle school education) and semi-skilled (after primary education) workers. It lasts respectively from one to three years, and from three months to one year.

The upgrading course provides exposure to knowledge and skills that are needed for promotion to higher positions. It trains semi-skilled and skilled workers from one to three months.

The refreshing course aims at enabling skilled and semi-skilled workers to keep up with changing technologies (one to four months).

The transfer course prepares trainees (skilled and semi-skilled workers) for different job situations in the same field.

There are presently 275 kinds of occupational training which cover 17 fields, the most important being metallic processing, metallic materials, electricity, electronics, transportation and construction equipment, textile, construction and chemical products.

The curriculum is divided into general subjects including social studies and physical education (4.3% of the total credit requirement), specialized subjects (15.7%), and practice (80%). The textbooks are developed by the Administration of Labour Affairs.

The occupational training institutions are public or private. The former are established by government agencies and local authorities. Today they account for 22% of the total. The latter (78%) include in-plant training institutes and non-profit training institutes. The law provides that firms employing more than 300 employees should offer occupational training for 10% of them each year to upgrade their skills.

Between 1969 and 1977, the number of occupational training institutions rose from 133 to 670, that of the kinds of training programmes from 115 to 234.

Training costs are borne by the institutions. It is possible to charge part of the cost on trainees when necessary. The employer is responsible for financing

the training of his employees when it is offered within the firm. When this training is not possible, the employer must contribute to the fund for the development of occupational training, or he entrusts training to an institution and pays a certain proportion of the cost.

III. National skill certification system

The national skill certification system is intended to:

improve the quality of skilled manpower;

enhance its socio-economic status;

promote the development of industry-based training;

standardize qualification grading and performance criteria.

The system is divided into two components: technicians and skilled workers. The former breaks down into three grades: II, I and head, and the latter into four grades: semi-skilled, grade II, grade I, master. There are criteria for each level. The testing methods used for certification vary from grade to grade. They combine written and skill tests, experience and interviews. The written tests are in the form of multiple choice, covering technological terms, theoretical foundation and computations ability. Skill tests require an actual performance of skills using tools and machines.

At the technician level, there are 200 kinds of certification in 19 fields. This number rises to 556 in 12 fields at the skilled worker level. The machine industry shows the largest number of certifications (21% of the total), followed by applied industry and chemical engineering.

The Ministry of Science and Technology is responsible for the development and planning of the certification system, the Korean Skill Certification Corporation for compiling test items, scoring the results and publicizing the successful applicants. Fifteen government agencies administer certification tests in their respective areas and register the certified personnel.

The skill certification test is compulsory for those completing high schools and occupational training programmes. It is optional for other people. The passing ratio is much higher in the former, which is attributed to the practice of basing questions on the curriculum of the technical high schools and occupational programmes.

Some incentive measures are offered to those who pass the certification test. The law provides for preferential treatment of certified skilled workers in recruitment, remuneration, promotion and transfer, in public administration and military service. This occurs also in private firms. Grade II skilled workers are granted an opportunity for admission to colleges of respective fields, grade II technicians are entitled to transfer into colleges of respective fields.

IV. Suggested direction of vocational education and training

The present educational and training programmes lack relevance to industrial needs. Greater emphasis should be placed on skill practice relative to industrial needs. The programmes should provide access to industrial experience for at least one year before their termination: this is necessary to improve specific job performance skills required on the working site.

At present, the occupational training is primarily concerned with preparing middle school graduates. Its scope should be enlarged to cover a wider spectrum of educational backgrounds, the high school graduates, the primary school-leavers or drop-outs.

The skill certification test should be improved toward a more valid and standardized one that has higher relevance to industrial needs. There is a tendency of basing evaluation criteria on the curriculum of vocational high schools or occupational training programmes, with little regard to what is to be needed on the working site. There is a wide gap between what is taught and what is expected by industry.

PART II

GENERAL COMMENTS

In undertaking the "Study on the General Educational Requirements for Access to Vocational Education", the Unesco Adult Education Section, Literacy, Adult Education and Rural Development Division, has set up general guidelines concerning the objectives of the study, statement of the problems and existing practice in the countries.

It is with respect to these guidelines that we shall now offer general comments on the four reports and try to draw from them a set of conclusions and recommendations for future programmes development.

I. Background data

The four countries belong to four different regions: Africa (Botswana), Arab States (Egypt), Asia (The Republic of Korea) and Latin America (Argentina). Moreover, they show different levels of economic development. Broadly speaking, Botswana can be said to be at the very beginning of the process of growth, Egypt and the Republic of Korea are semi-industrialized countries, while Argentina is the most "mature" of the four. The case studies provide more or less information about the general background (it is inexistent for Egypt). However, their data are not comparable, so we have drawn the following statistics from various sources in order to provide a comparative picture. The sources utilized are:

1978 World Bank Atlas;

United Nations, Statistical Yearbook 1977;

United Nations, Yearbook of National Accounts Statistics 1977;

Unesco, Statistical Yearbook 1977;

ILO, Yearbook of Labour Statistics 1978.

Comparative statistics

	Argentina	Botswana	Egypt	Republic of Korea
Area (km^2)	2,766,889	600,372	1,001,449	98,484
Population (1976)	25,719,000	679,000	38,228.000	35,860,000
Density per km^2	9	1	38	364
Rate of demographic growth (1970-1976)	1.3%	3%	2.3%	1.8%
GNP per capita in US $ (1976)	1,580	390	280	700
GNP per capita growth rate (real) (1970-1976)	1.8%	8.8% (1964-1976)	3.1%	8.7%
External aid per capita, average 1974-1976, in US $	1	67	9	7

	Argentina	Botswana	Egypt	Republic of Korea
Structure of GDP (%)	(1975)	(1974)	(1975)	(1975)
Agriculture	12	27	30	25
Mining	3	10	5	2
Manufacturing, including electricity, gas, water	33	7	17	28
Construction	4	10	4	5
Trade	10	21	14	17
Transport and communications	8	3	5	6
Government and other	23	22	23	15
Total	100	100	100	100
Economically active population in % of total population (1975)	38.6	47.7	28.0	36.6
Structure of employment (%)	(1970)		(1975)	(1977)
Agriculture	14.8		47.8	40.2
Mining	0.5		0.1	0.8
Manufacturing	19.7		14.0	20.8
Construction	7.9		2.7	4.7
Electricity, gas, water	1.1		0.5	0.2
Commerce and finance	17.5		10.0	16.1
Transport	6.6		4.5	3.6
Other	31.9		20.4	13.6
Total	100		100	100
Percentage distribution of population 25 years of age and over by educational attainment	(1970)	(1971)	n.a.	(1970)
Total	12,366,850	198,681		12,582,515
No schooling	8.3	70.5		72.6
First level				
Incompleted	41.8	24.3		
Completed	30.6	2.1		21.8
Second level				
1st cycle	7.8	1.8		
2nd cycle	7.5	0.6		
Post-secondary	4.0	0.6		5.6

Botswana's GNP (gross national product) per capita is higher than Egypt's because of its mineral wealth, and not of its general level of economic development. Besides, the GNP per capita is not related to the cost of living in each country. If industrialization is measured by the part of industry in GDP and in the distribution of the economically active population, the Republic of Korea is now near the Argentine level, even if the part of its agriculture is still very high. Finally, the distribution of the population by educational attainment is more balanced in Argentina than in Korea: illiteracy is still prevalent in the latter while very low in the former; contrarily the Republic of Korea has put a greater emphasis on the development of higher education. One can guess that there is a greater shortage of middle level technicians in this country. Botswana, for its part, has to depend enormously on foreign personnel.

Let us recall the objectives of the survey as indicated in Unesco's "Guidelines for the Study on the General Educational Requirements for Access to Vocational Education":

(1) to analyse existing facilities for vocational education (both formal and informal) in relation to accessibility by persons already in employment;

(2) to access the availability of opportunities for continuing technical education, especially for those persons who had required their technical know-how informally;

(3) to describe access requirements for vocational education;

(4) to set out existing admission regulations, whether based on legislation or otherwise, and other conditions both favourable and unfavourable to the broadening of access to vocational education;

(5) to examine the relationships between formal and non-formal modes of knowledge and skill acquisition for the benefit of working persons.

In what measure do the four studies answer these questions?

II. Existing facilities for vocational education

This is the major part of the four studies. They describe in detail the existing facilities, both formal and informal, public and private, school-based and post-school training.

Concerning the major question: do these schools and centres admit workers who have picked up their skills on the job, at home or in self-employment, but lack sufficient schooling, the answer is no for the great majority of them.

In Argentina, if we except the televised courses, there are no entrance requirements only for the shortened vocational education courses for adults (public and private) and the training courses for instructors by CONET: they are chosen from experienced and skilled workers, they may not have had schooling. Otherwise the minimum educational requirement for all other courses is to have completed primary education. However the case of Argentina is rather special, since this country has a high educational level among the developing countries: only 8.3% of its adult population has no schooling, compared to 70.5% in Botswana and 72.6% in the Republic of Korea. The questions posed in Unesco's Guidelines refer more to underdeveloped, undereducated countries than in a country like Argentina which is nearer the level of industrialized countries.

In Botswana, the picture is different. On the one hand, we find a lack of qualified manpower and a heavy dependence on foreign technicians and professionals, on the other hand poverty and unemployment limit the facilities for vocational training. The only formal institution, the National Centre for Vocational Training as well as the brigades require at least primary school education. Due to unemployment, the expansion of education, the formalization of trade testing, the lack of places, entry requirements have risen also: completion of standard 7 is considered necessary, but not sufficient for passing trade test C. More and more applicants are secondary school-leavers.

Botswana is the only country among the four chosen where education, training and trade testing are conducted in a foreign language (English). This may debar people not proficient in English. In fact, the initial constraint being the restricted number of places available, not all applicants who are proficient in English are accepted. Trade testing certifies the trainee as skilled or semi-skilled craftsman (depending on the level of the test). However, if the acquisition of skills is for self-employment and not for certification, the level of formal schooling is irrelevant.

Besides the formal institutions, public and private employers provide skills training from the semi-skilled level to advanced craft or technician training. There is considerable variation between the large and the small employer in terms of the extent and types of training they provide or sponsor.

The big employers (government departments and mining companies) have well-developed programmes of training, usually based on a training centre or trade school within the establishment. Although part of the training is centred on the classroom, they place greater emphasis on practical experience either on the job or in the training workshops. Some also send trainees to the Polytechnic. Most employers view training as an investment for the future.

On the contrary, for the smaller employer, the cost of training and the loss of labour (during training or after training if they leave them for better jobs) are major constraints. The bulk of training is therefore informal on-the-job training and is, moreover, limited by the lack of skilled training personnel.

As for the self-employed, most of them have low levels of schooling, acquired their skills on the job, and have not them certificated. They wish to upgrade their skills and ask for part-time, evening, day-release, weekend and correspondence courses, but need above all financial and material support from the government.

In Egypt, there are several institutions where unskilled workers or even young people with only four years of primary education or less are admitted; they must however master reading, writing and arithmetic and pass vocational guidance tests. These are: the accelerated training system adopted to cope with the needs of the labour market, particularly in the building and the manufacturing industries (to become semi-skilled workers); it requires the literacy certificate (equivalent to the 4th grade); the Vocational Gradation Project which trained successfully 138,145 people during the period 1968-1978; the Productive Families Project which trains young people belonging to poor families on manual crafts related to carpets, blankets, carpentry, leather work, palm tree products, agricultural products, etc., in specialized centres; graduates from these centres can be admitted to upgrading centres where they acquire specialized skills to become trainers. One should mention also the skill upgrading system in industry under which the companies select workers and supervisors with at least five years experience to upgrade their technical standard and promote them. Finally, the Army is also a teaching institution.

The number of people trained or upgraded by all these institutions is very low compared to the economically active population. The female rate of activity is also very low (4.3% only as against 51.3% for the male one). With these exceptions, all the technical and vocational schools and centres, formal and non-formal, public and private, require as a minimum for entry the junior secondary school certificate (including the apprenticeship system).

In the Republic of Korea also, all the vocational schools, formal and non-formal, with programmes lasting three years, require, as the minimum for entry, completion of primary or middle education. Only the youth occupational schools and private training institutes, the programmes of which last from 1 to 12 months, have no entry requirements, because they are simply job-oriented. In fact, in the private training institutes, all the trainees have high school or middle school level. The special courses in industrial firms created in 1977 to enable the employed youngsters to continue schooling require also the completion of primary education.

To sum up, if we take the first question posed by Unesco's Guidelines, the accessibility to the national vocational training system for those persons who have acquired their skills informally, the situation in the four countries chosen shows that this accessibility is practically non-existent. Practically all vocational schools and post-school industrial training centres require at least completion of primary education for entry. In the case of Botswana, an additional obstacle is the use of a foreign language (English) as the medium of instruction.

Unesco's Guidelines assume that "in very many cases the rough-and-ready skills thus (i.e. informally) gained would benefit considerably from even brief exposure to the country's vocational training institutions". This assumption can be questioned. In effect, the four reports state that training under the education system is inadequate to meet the demands of industry. This is why private firms and government departments prefer to have their own private training centres to train manpower for their specific needs. So the major question is not the accessibility to irrelevant (as they are) vocational training programmes, but how to make them relevant to the needs of industry and how to upgrade and promote those persons whose skills have been acquired entirely on the job.

One may envisage several possible solutions which can be combined:

make the formal vocational programmes more relevant to the needs of industry by studying them and then developing the curricula;

make them accessible to all persons with a given level of education (not formal schooling) and skills, utilizing reliable tests;

upgrade their level of education and skills through air, correspondence, evening, part-time courses and mobile training units;

encourage through fiscal devices private firms and public administrations and companies to train their manpower.

III. The apprenticeship system

In Argentina, the apprenticeship system has disappeared due to two major reasons: on the one hand, it was too costly for firms to employ minors and pay them almost full wages for a shorter working day; on the other hand, trade unions exerted pressure to prevent young apprentices from displacing older workers.

In Botswana there is no apprenticeship legislation, but only apprenticeship schemes in two private firms. Apprenticeship legislation is considered desirable in order to improve the provision and standards of training for young people.

In Egypt, the system is organized by the Ministry of Industry in co-operation with the employer as for determining the number of trainees, the required skills and hours of training.

The Korea report does not mention the problem.

IV. Upgrading courses

In the four countries, upgrading courses exist but only in big public administrations and private firms. Smaller firms or firms in certain sectors like construction or textiles which employ workers with a low educational level, make no effort to upgrade them or even to train them.

There are therefore no upgrading courses for the majority of workers, for the unemployed, the self-employed or family workers.

V. National certification of skills

According to Unesco's Guidelines, information from the Trade Testing Unit can be of great importance in demonstrating demand for and interest in vocational preparation. Often people who have not been lucky enough to train in institutions will attempt trade tests.

Apart from Egypt, all the countries have a national system of skill certification.

In Argentina, the certificates are awarded by CONET to the graduates of its courses. This means that those who are not trained by CONET have not access to any kind of skill certification.

In Botswana, trade testing includes three levels A, B, C: the tests are conducted twice a year at different centres.

All candidates are accepted, but they have to bring their tools and proof of work experience. No fee is charged for the tests. The tests include both theory and practicals and are conducted in English, except for trade test C. The use of English may debar some candidates. The number of applicants not employed by government or major companies is not known.

In the Republic of Korea, the skill certification test is mandatory for those completing technical high schools and occupational training programmes, and optional for others. There are several incentives for the certified workers. But the number of the free applicants is unknown.

VI. Survey of learning needs of the self-employed and workers in the small factory sector

This survey was conducted only in Botswana and its results have been presented above.

VII. Opinions of vocational institutions on the existing entry requirements for skill training

Here again only the Botswana report made such a survey.

At the National Centre for Vocational Training, there is a lack of sufficient applicants to Part One Training of the correct calibre and qualifications. For Part Two Training, the main entry requirement is that the person be sponsored by the employer; to a small extent, the need for fluency in English may have debarred some potential students from these courses.

At the brigades, there is also the need for proficient English, but the initial constraint being the restricted number of places available, not all applicants who are proficient in English are accepted. As the level of training gets higher and trade testing becomes more formalized, so brigades have tended to take applicants with higher qualifications than primary education.

VIII. Opinions of employers

Unesco's Guidelines ask for taking the views of employers about trainees and trainers in vocational education institutions, of firms refusing to send their workers for upgrading or to take on apprentices.

This enquiry was not made by the Argentina report. It states only in its conclusion that the Argentina labour market appears reluctant to absorb workers trained under the education system, or, better said, this training is inadequate to meet the demands of productivity. Irrespective of this fact, CONET has a course for training instructors in co-operation with the firms. When they need certain skills, they request CONET to train instructors who will then organize courses within the industry. So, in Argentina, the training of workers is almost entirely factory-based.

The Botswana report interviewed employers about their attitudes to the vocational institutions. The brigades are considered by them as a potentially important source of recruitment, although they provide only a limited range of training. Contrarily, they are not satisfied with the NCVT which has failed to meet their specific training needs. The reasons are various: problems of staffing, frequent changes to programmes and examination arrangements, lack of dialogue with employers, lack of a stable or consistent approach to the management of courses. Not only do the graduates lack the necessary competence for skilled manual work, they also have a poor attitude to work and work discipline, which is accentuated by an inflated sense of their ability and usefulness. This is why employers prefer to undertake training within their own establishments.

The Egyptian report mentions that the curricula of both the primary and the junior secondary schools lack some practical activities which could develop in the students prevocational skills that would familiarize them with different vocations and help them choose the most suitable ones according to their interests, abilities and aptitudes. Studies are being conducted to work out such curricula.

As for the technical secondary schools, their programmes are too theoretical, only one-third being devoted to practical training. Moreover, most of their workshops suffer from shortage of the necessary equipment, of outdated machines and tools. Besides, the students do not do any training in factories. Another drawback lies in the method of training. The result is a low standard of the graduates, their inability to cope with the needs of industry; 25% of them are not employed in the trades for which they have been prepared.

On the other hand, the training programmes given to different categories of workers seem limited to practical training without any consideration of cultural aspects.

The Korea report did not survey the employer's opinions. However it makes reference to another study conducted for 50 industrial firms, according to which the present educational and training programmes lack relevance to industrial needs; they should put greater emphasis on skill practice.

IX. Recommendations

Unesco's Guidelines ask the reports to state some of the policy implications of what they will have analysed. Only the Botswana and the Egypt reports draw a list of recommendations. These are practically inexistent in the Argentina report. The Korea report lists a number of suggestions but derived from another study, not from its own description (in effect these two reports describe the situation, but do not analyse the problem).

It must be noticed that the questions posed in Unesco's Guidelines refer to the demand side, that is envisage the problem of access to manual skills training. This problem is not related to the general social context. Now, the supply side should also be taken into account. Provision of training may be barred by such constraints as the lack of finance or the lack of qualified training staff. In the case of Argentina, but not in Botswana nor in the Republic of Korea, a source of trained manpower has been, and still is, provided by European immigration. Egypt is facing the opposite situation: hundreds of thousands of its technicians and workers are attracted to work in Arab oil countries.

Taking these considerations into account, one may draw the following recommendations from the reports, especially the Botswana one.

1. At the primary and middle education levels, that is during initial or general education, some kind of initiation to work should be included in the curriculum. This is the problem of liaison between the school and production, of which there are many attempts all over the world, sometimes successful, sometimes unsuccessful.

2. Present occupational programmes in vocational schools and training institutes lack relevance to the needs of industry. There should be closer dialogue with employers to ascertain training needs, greater emphasis on in-service training for trainees with work experience based on short courses and day-release programme. The schools should also not only teach the curriculum, but try to inculcate work ethics and work discipline.

3. Training programmes should be prepared in the following manner:

(a) first identify the needs of the productive sector (industry, agriculture, etc.) in co-operation with the employers;

(b) analyse each occupation with the tasks it includes;

(c) list the skills that the worker should possess and which should therefore form the backbone of his training;

(d) ascertain the occupational level the worker should attain and the initial education (not schooling) and/or experience he should have.

4. The vocational school should cater to the needs not only of the school-leavers at different levels (either graduates or non-graduates), but also of the adults with work experience but no or insufficient formal schooling. These people should be able to attempt trade tests for national certification of their skills.

5. Trade tests should include theory and practice and be relevant to the needs of industry, that is to what is expected of the workers by the employers. Too often tests are based on the curriculum of the vocational schools and not on job requirements.

6. The private sector should be encouraged to provide training and upgrading to their workers and employers within their establishments and/or through sponsorship to an external training institution. A training levy scheme could be applied on an industry by industry basis whereby employers would make a mandatory contribution to financing such training.

7. There should be a central technical training and testing council for co-ordination and supervision of the national system of training and evaluation. Such a body should include representatives from the government, employers and trade unions. Its primary function would be to determine, supervise and evaluate the content and methods of training and testing.

The consultant's view of the reports

The choice of Argentina was not a good choice, because this country is not representative of the majority of the developing countries, neither from the point of view of the level of economic development nor of the educational level. Moreover, the report is a very general one, essentially descriptive and not analytic. It does not provide an in-depth survey of the problems nor answer most of the questions raised in Unesco's Guidelines. Some of its figures are clearly erroneous: for example, page 2: the metropolitan area does not account for 50.1% of the total population, but for 36.9%; page 4: how can metallurgy account for 62% of the GNP, while all the manufacturing industries account for 29%? page 54: foodstuffs industries employ 60% of the economically active population! In 1970, the manufacturing industries, excluding electricity, gas and water, account for 24% of the employment. Finally, there are no recommendations.

Botswana, Egypt and the Republic of Korea are more representative of the developing countries.

The reports on Egypt and Korea are, like the Argentina report, essentially descriptive. They do not analyse problems nor answer many questions posed in Unesco's Guidelines.

The Botswana report is the best of the four. The objectives and terms of reference of the study are well delimited, problems analysed, Unesco's questions answered and recommendations made. It must be recognized that Botswana is a small country and its economy not so complex as the other, and so it was easier to make an in-depth survey.